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(56) Documents Cited
GB 2225299 A **US 5065921 A** **US 4790713 A**
US 4171077 A **US 3921869 A**

(58) Field of Search
UK CL (Edition M) **B7B BTC BTF2 BTL1 , B7J**
INT CL^5 **B60R 9/10 , B62D 63/06**

(54) Bicycle transportation carrier

(57) A bicycle transportation carrier which supports bicycles on their rear wheels with the front forks vertically above. The bicycles front wheels have been removed to allow the handle-bars to be rotated through 90 degrees to permit a denser loading configuration.

The bicycle carrier has a quick release facility to attach it to a vehicle tow-bar. The carrier's lower framework 3 which supports the rear bicycle wheel is hinged to allow it to be folded onto the carrier's vertical framework 2 for compact storage.

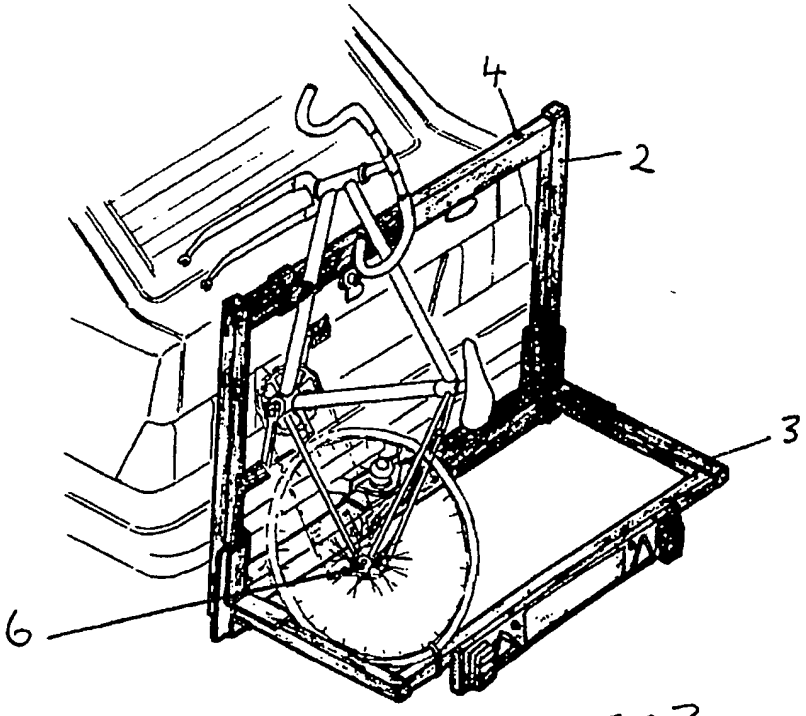

FIG 3.

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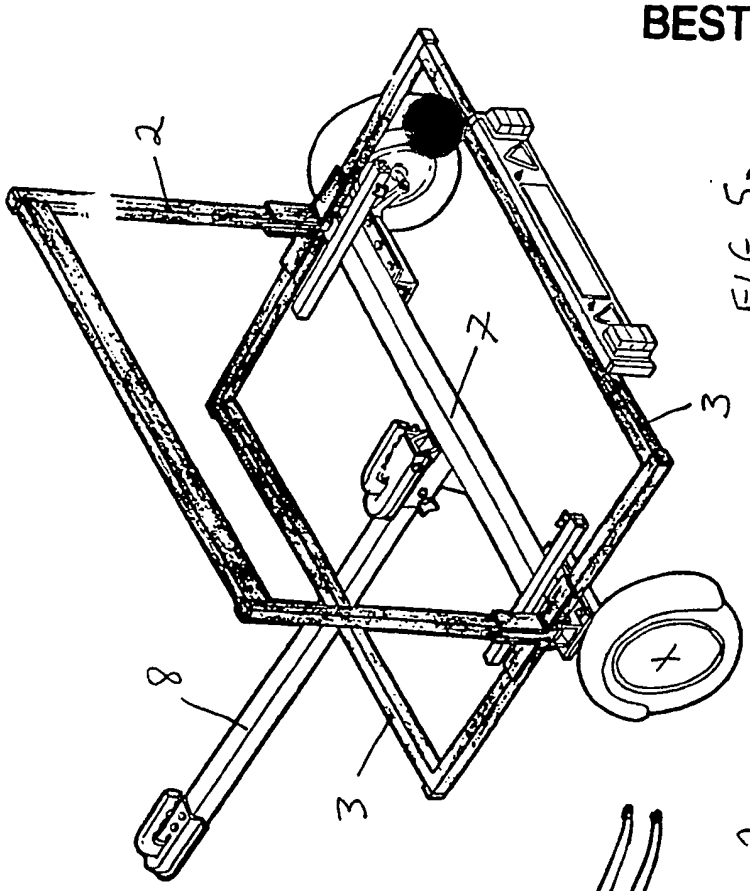


FIG 5.

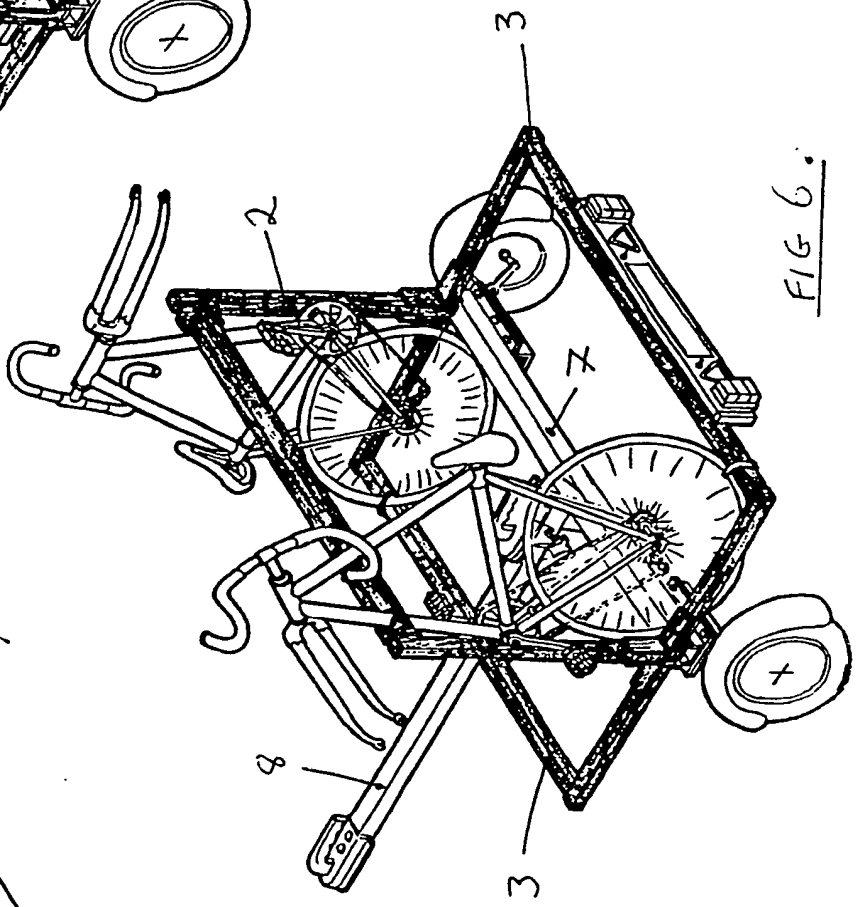
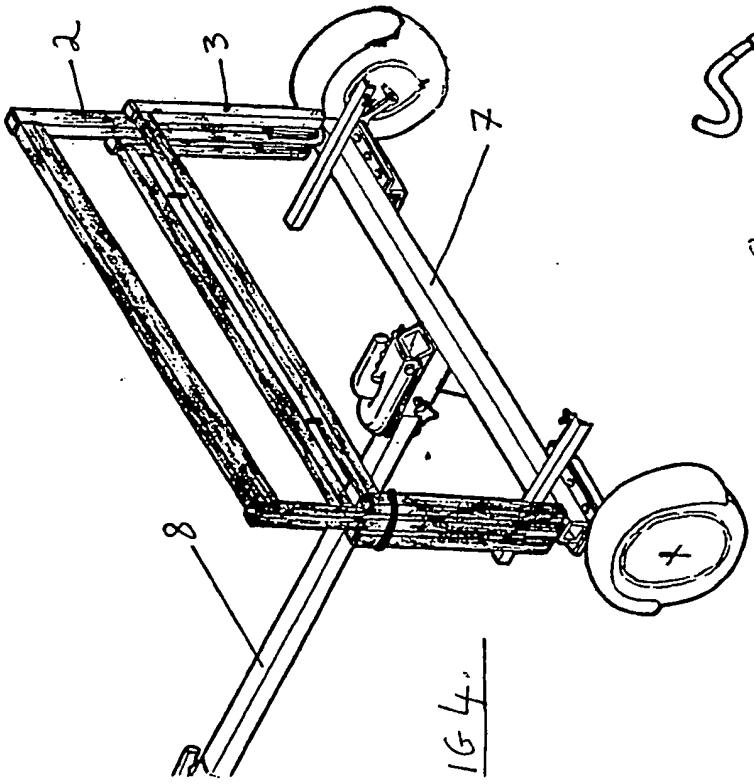


FIG 6.



IG 4.

This invention tackles the above problem by not transversly mounting bicycles at the rear of vehicles. The configuration chosen is vertically mounting the bicycles with their front wheels removed, at the rear of vehicles. This configuration keeps the centre of moment close to the vehicle, and enables more bicycles to be individually supported on the rear of a family vehicle. The carrier also enables adjacent bicycles to be loaded closer together as the steering mechanisms are turned at right-angles, and do not foul each other. The carrier can be folded to reduce storage or car parking problems. Carrier attachment to vehicle is envisaged as "strap and brackets" to the vehicle superstructure or by attachment to the vehicle tow-hitch. The same concept of carrier can also be incorporated into the design of a trailed vehicle, enabling a significant number of bicycles to be transported within a small volume.

Referring to Fig 1 a rectangular framework 2 is vertically attached to the vehicle special tow-hitch 1 by a quick release pin. An additional rectangular framework 3 is attached to framework 2 by a pair of hinge mechanisms 5. The hinges 5 permit the frameworks 2 and framework 3 to be folded together, for car parking, or carrier storage. The hinges 5 also permit framework 2 and framework 3 to be positioned approximately at right angles to one another. The upper rail 4 of framework 2 is provisioned with a plurity of bicycle tube clamping arrangements.

Fig 2 shows the carrier with frame 2 unfolded in its carrying mode, made possible by hinges 5. The frame 3 forms an approximate right angle with frame 2 and is held in this position by an end stop on frame 3 contacting frame 2.

Fig 3 shows the bicycle 6 with its front wheel removed, and held in the carrier. The bicycle 6, rear wheel is held tightly as it drops between the framework on framework 3, where the gap is equivalent to a major chord, (but less than the diametre of the bicycle wheel). The bicycle 6 front wheel-forks over-hang the carrier's vertical framework 2 whilst the bicycle 6 lower diagonal frame tube is engaged in the tube clamping arangement at bar 4. Further security of attachment to the carrier can be provided by strapping the wheel where the tyre comes into contact with the frame 3.

A further example of the invention is described with reference to Fig 4, Fig 5 and Fig 6.

CLAIMS

1 A vehicle mounted bicycle transportation carrier, which supports one or more cycles in a vertically poised configuration, with the bicycle weight being exclusively taken on its rear wheel.

2 A cycle transportation carrier as in (1) where the cycle is balanced in its vertical configuration by clamping the cycles lower diagonal frame tube to the carrier.

3 A bicycle transportation carrier as in (1) and (2) where the bicycle front wheel is removed and the steering mechanism is rotated through approximately 90 degrees to enable closer stacking of a number of bicycles.

4 A bicycle transportation system as in (1) to (3) which is attached to the rear of a vehicle by means of a quick release mechanism to the vehicle tow-hitch.

5 A bicycle transportation system as in (1) to (3) which is encorporated into the design of a trailed vehicle chassis.

6 A bicycle transportation system as in (1) to (5) where the carrier consists of a single bicycle wheel support framework which can accommodate one or more bicycles, which is attached by a hinged mechanism to a vertically positioned framework, whose function is to balance the bicycles in an approximate vertical position.

7 A bicycle as in (1) to (6) where the bicycle wheel support framework can be folded onto the vertical framework to permit easy vehicle parking, or to enable the carrier to have a compact storage potential.

8 A bicycle support means substantially as shown in or as described with reference to the accompanying figures.